

**PERMITTING AND COMPLIANCE DIVISION
SOLID WASTE MANAGEMENT SECTION
PO BOX 200901
HELENA, MT 59620-0901
Phone: (406) 444-5300
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**GUIDELINES FOR LICENSING ONE-TIME LANDFARMS FOR THE REMEDIAION OF
HYDROCARBON CONTAMINATED SOILS***

Generators of less than 1,600 cubic yards (yd³) of hydrocarbon contaminated soil resulting from a leak or spill from an underground storage tank (UST) system should contact the DEQ LEAKING UNDERGROUND STORAGE TANK (LUST) PROGRAM at 841-5000 for an evaluation of treatment or disposal options.

The landfarming of non-hazardous contaminated soil in quantities greater than 1,600 yd³ from an underground storage tank (UST) leak or spill requires an application for a Solid Waste Management System Landfarm license from the SOLID WASTE PROGRAM and the completion of an Environmental Assessment (EA) for the proposed site. (*Specific Guidelines and Applications are available*) The same applies for facilities that manage soils from multiple sites or spills.

Generators of less than 1,600 yd³ of non-hazardous contaminated soil, generated from a **single spill event** should contact the SOLID WASTE PROGRAM at 444-5300 for an evaluation on what options are available for the remediation or disposal of the contaminated materials. These options include:

- (1) Haul the contaminated soil to an existing licensed soil treatment facility.
- (2) Disposal of the material in a licensed Class II landfill.
- (3) Bioremediation of the contaminated soils through one-time landfarm management techniques either in-situ, on the generator's property, or on property contracted through another owner – an application must be completed and a license review fee must be included. The application form is attached to this document.

**This document discusses landfarming of hydrocarbon-contaminated soils that are not a hazardous waste. The Administrative Rules of Montana (ARM) 17.54.402 state that a person who generates a waste must determine if that waste is a hazardous waste. No waste that meets the definition of a hazardous waste, including conditionally exempt small quantity generators of hazardous waste, may be treated stored or disposed of at the site. For more information about hazardous wastes, please contact the HAZARDOUS WASTE PROGRAM at 444-5300.*

There are siting and operation criteria that the operator should adhere to when landfarming contaminated soils. Landfarm siting and operation must not cause a threat to human health or the environment. The landfarm operator is responsible for the proper sampling, operations, monitoring, and remediation of the contaminated material at the site. The landfarm operator and the landfarm property owner are liable for any environmental degradation resulting from the landfarm.

ONE-TIME LANDFARMS

What To Look For When Selecting a Landfarm Site

Landfarm Bioremediation uses a combination of oxygen, moisture content, temperature and naturally occurring soil microorganisms to break down contaminants. The best landfarm sites are isolated flat areas on high ground where wind can blow over the soils, where standing water cannot accumulate and where there are no surface water drainages. Sites where soils have high silt and clay content are preferred over sites where soils consist of sand and gravel. Generally, depending on soil type, the site should be at least 500 feet from any wells, and greater than 25 feet from the seasonally high ground water level. The location of nearby wells and the depth to ground water must be evaluated through a review of well logs or other available information. Information on soils at the site should be obtained from the Natural Resources Conservation Service (NRCS).

No landfarming activity shall occur where petroleum wastes are likely to cause pollution of any state waters (Section 75-5-604, MCA).

Proper Landfarming Procedures

1. Collect background or baseline samples representative of the entire area of native soils at the approved landfarm site before spreading the contaminated soil. The samples should be analyzed for total petroleum hydrocarbons (TPH). Representative samples of the contaminated soil must also be collected and analyzed for benzene, toluene, ethyl benzene and xylene (BTEX) or for TPH depending on the source of contamination. Generally, one composite sample, consisting of five sub-samples per two hundred cubic yards (200 yds³) of contaminated soil should be taken.
2. Cobbles and rocks generated during excavation of the contaminated soils that may impede proper tilling or reclamation of the one-time registered landfarm should be removed prior to spreading soil at the landfarm site.
3. Spread the contaminated soil in a thin layer (less than 6 inches) at the landfarm site. Construct a berm around the site, or otherwise prevent surface water run-on and run-off. Mechanically till or turn over the soil periodically (approximately monthly) during the warm months (May to October) to promote soil exposure to air and sunlight.
4. Collect soil samples within and beneath the treatment area on a periodic schedule to verify that there is no significant leaching of constituents, and to determine when contaminant concentrations are low enough to stop treatment activities. Retain all sampling and monitoring results for your records, and send copies to the Solid Waste Program. Establish the necessary number and frequency of soil samples to be collected at each site in order to determine when treatment can be halted. In most cases, soil contaminated with gasoline should be relatively clean after a summer of proper landfarming. Soil contaminated with diesel fuel, waste oil, or a mixture of petroleum products may require longer treatment time.

5. Some landfarming technologies recommend the addition of mixtures of fertilizer, moisture, or other products to the soil to increase degradation of petroleum products. Refer to the landfarm guidelines for suggested nutrient and moisture contents. Landfarming soils contaminated with other materials, such as antifreeze or solvents, is prohibited.
6. When it can be documented that soils have been remediated, the site shall be reclaimed, using topsoil if necessary, and re-vegetated in order to provide for pre-landfarm or some other beneficial use of the land area.



Montana Department of Environmental Quality
 Permitting and Compliance Division
 Waste and Underground Tank Management Section
 Solid Waste Program
 PO Box 200901
 Helena, MT 59602

ONE-TIME LANDFARM LICENSE APPLICATION

INSTRUCTIONS:

1. Fill out the form in its entirety – Incomplete applications will be returned.
2. Sign the completed application.
3. Enclose a check or money order for the application review fee based on the following:
 $\geq 800 \text{ yds}^3$ fee = \$500.00
 $< 800 \text{ yds}^3$ fee = \$200.00
4. Return the completed form, with all attachments to:
DEQ Fiscal Services Division, PO Box 200901, Helena, MT 59620-0901
 Once approved, the one-time landfarm license will be issued and mailed directly to the applicant.

Section 1

APPLICANT INFORMATION (Please Print)

Applicant Full Name:	Applicant Mailing Address:
Property Owner Name:	Property Owner Mailing Address:

Section 2

LANDFARM SITE INFORMATION

Site Location/Physical Address:		City:		State:	Zip:
Legal Description of Site: (to nearest $\frac{1}{4}$, $\frac{1}{4}$ Section)	Section:	Township:	Range:	County:	
_____ $\frac{1}{4}$ _____ $\frac{1}{4}$					
Dimensions of Landfarm Site: _____ feet by _____ feet		Total Acreage Proposed for One-Time Landfarm Site:			
Estimated Depth to Ground Water:		Copies of Well Logs Attached:		Are any municipal water supplies located within 5-miles of the proposed landfarm?	
Source of Ground Water Information:		() Yes () No If no, why not?		() Yes <i>If yes, attach location and description information</i> () No	

Section 2 - continued

Have background Samples been taken at the Landfarm site?

() Yes [*Attach copies of background sample results*]

() No If no, why not?

Has Site Been Previously Used as a Landfarm Site? Yes () No ()

(If yes, attach details on a separate page)

Soil is Contaminated With: (*check all that apply*)

Gasoline:

Diesel:

Waste oil:

Heating fuel oil:

Other (describe) _____

Estimated Volume of Soils to be Landfarmed:

_____ yds³

(attach copies of contaminated soil sample results)

Cause of Soil Contamination:

Date of Spill/Contamination:

Date Soil will be spread at the Landfarm Site:

Will Soil be Stockpiled at Landfarm Site Before Being Tilled?

Yes () No ()

If yes, for how long?

Will stockpiled soils be covered and/or bermed? (describe)

What is the Current Use of the Landfarm Site?

What is the Proposed Use of the Site after Soil Treatment is Completed?

Provide a summary of the proposed Operation and Maintenance activities of the landfarm that include:

- Soil tilling schedule
- Number and frequency of soil sampling activities
- Proposed fertilizer, moisture, or other remediation-enhancing product additions
- Proposed site reclamation and closure activities

Section 3**ATTACHMENTS**

- ☐ Site map on a topographic map locating and labeling all geographic and cultural features found within 2-miles of the landfarm site (buildings, wells, drainages, and roads). Show scale or distance from features to the landfarm area.
- ☐ Background Sample Results
- ☐ Contaminated Soil Sample Results
- ☐ Information on Municipal Water Supply locations
- ☐ Copies of Ground Water Well Logs
- ☐ Site Operation and Maintenance Summary

Section 4**SITE CERTIFICATION/APPROVAL****LANDFARM OPERATOR CERTIFICATION**

I, _____, certify that the information contained on this form is accurate to the best of my knowledge. I acknowledge the impacts to public health and the environment resulting from the landfarming of contaminated soil at this site are the responsibility of the landfarm operator, and potentially the owner of the landfarm site property.

Signature _____ Date _____

Title _____

PROPERTY OWNER SIGNATURE

I, _____, hereby certify that I am the Property Owner or Designated Representative of the Property Owner (***circle one***) of the proposed landfarm site and that the applicant has my permission to use the site for the purpose of the one-time landfarm. I acknowledge the impacts to public health and the environment resulting from the landfarming of contaminated soils at this site are the responsibility of the landfarm operator, and potentially the owner of the landfarm site property.

Signature _____ Date _____

Title _____

HEALTH OFFICER CERTIFICATION

I, _____, am the Health Officer or Designated Representative of the County. I certify that this one-time landfarm location is suitable for this purpose.

Signature _____ Date _____

Title _____

A copy of this document MUST be retained for your records. Make a copy for your records and return the ORIGINAL signed document to the Department of Environmental Quality at the above listed address.

ACRONYMS USED IN HYDROCARBON FLOWCHART

UST - Underground Storage Tank

LUST - Leaking Underground Storage Tank

HW - Hazardous Waste

SW - Solid Waste

WQ - Water Quality

STF - Soil Treatment Facility